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Application No. 10/684,432
Reply to Office Action of December 12, 2006

Docket No.: R2184.0266/P266

AMENDMENTS TO THE CLAIMS

1. (Currently amended) A data recording device, comprising:

a recording unit that records data on a recording medium, said recording medium including a plurality of recorded regions each having data recorded by the recording unit and a plurality of unrecorded regions without any data recorded; and

a recording state determination unit that stores recording state data for distinguishing the recorded regions from the unrecorded regions;

wherein the recording unit includes:

a determination unit that determines whether a first region immediately prior to a second region is unrecorded by the recording state determination unit, the date to be recorded in the recording medium being to be recorded in said second region;

a dummy data recording unit that records dummy data in the first region when the determination unit determines that the first region is unrecorded, said dummy data enabling reading data in the second region; and

a controller that

a mark recording unit configured to record a mark in one of the unrecorded regions preceding an object region to which the recording unit is to record data, said mark enabling reading of the object region; and

the recording state determination unit identifies the first region recorded with the dummy data said marked region as one of the unrecorded regions.

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2. (Original) The data recording device as claimed in claim 1, wherein the mark includes dummy data used for generating a synchronization signal when reading data on the recording medium.

3. (Original) The data recording device as claimed in claim 1, wherein the mark includes one ECC block of dummy data when the recording medium is in compliance with a DVD+RW disk standard.

4. (Original) The data recording device as claimed in claim 1, wherein the recording state determination unit stores the recording state data for each minimum recording region of the recording medium to determine a recording state of each of the minimum recording regions.

5. (Original) The data recording device as claimed in claim 1, wherein the recording state determination unit distinguishes the recorded region from the unrecorded region based on a bitmap including a plurality of one-bit recording state flags.

6. (Original) The data recording device as claimed in claim 5, further comprising a recording state flag storing unit configured to store the recording state flags.

7. (Original) The data recording device as claimed in claim 5, further comprising a recording state flag recording unit configured to record the recording state flags to a recording state flag recording region in the recording medium.

8. (Original) The data recording device as claimed in claim 7, wherein the recording state flag recording region is allocated in a Formatting DisK Control Block (FDKB) in a lead-in area of the recording medium, when the recording medium is in compliance with a DVD+RW disk standard.

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9. (Currently amended) A method for recording data on a recording medium including a plurality of recorded regions each having data recorded and a plurality of unrecorded regions without any data recorded, the method comprising the steps of:

storing recording state data for distinguishing the recorded regions from the unrecorded regions;

determining whether a first region immediately prior to a second region is unrecorded;

recording a dummy data in the first region when the first region is unrecorded, said dummy data enabling reading data in the second region;

~~recording a mark in one of the unrecorded regions preceding an object region to which data are to be recorded, said mark enabling reading of the object region; and~~

identifying ~~said marked region~~ the first region recorded with the dummy data as one of the unrecorded regions.

10. (Currently amended) A program stored in a computer-readable medium and executable by a computer for recording data on a recording medium including a plurality of recorded regions each having data recorded and a plurality of unrecorded regions without any data recorded, the program comprising the steps of:

storing recording state data for distinguishing the recorded regions from the unrecorded regions;

determining whether a first region immediately prior to a second region is unrecorded;

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recording a dummy data in the first region when the first region is unrecorded, said dummy data enabling reading data in the second region;

recording a mark in one of the unrecorded regions preceding an object region to which data are to be recorded, said mark enabling reading of the object region; and

identifying said marked region the first region recorded with the dummy data as one of the unrecorded regions.

11. (Currently amended) A computer-readable storage medium that stores a program executable by a computer for recording data on a recording medium including a plurality of recorded regions each having data recorded and a plurality of unrecorded regions without any data recorded, the program comprising the steps of:

storing recording state data for distinguishing the recorded regions from the unrecorded regions;

determining whether a first region immediately prior to a second region is unrecorded;

recording a dummy data in the first region when the first region is unrecorded, said dummy data enabling reading data in the second region;

recording a mark in one of the unrecorded regions preceding an object region to which data are to be recorded, said mark enabling reading of the object region; and

identifying said marked region the first region recorded with the dummy data as one of the unrecorded regions.

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12. (Currently amended) A data recording system comprising:

a host computer; and

a data recording device,

wherein

the data recording device comprises:

a recording unit that records data on a recording medium, said recording medium including a plurality of recorded regions each having data recorded by the recording unit and a plurality of unrecorded regions without any data recorded; and

a recording state determination unit that stores recording state data for distinguishing the recorded regions from the unrecorded regions;

wherein the recording unit includes:

a determination unit that determines whether a first region immediately prior to a second region is unrecorded by the recording state determination unit, the date to be recorded in the recording medium being to be recorded in said second region;

a dummy data recording unit that records dummy data in the first region when the determination unit determines that the first region is unrecorded, said dummy data enabling reading data in the second region; and

a controller that

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~~a mark recording unit configured to record a mark in one of the unrecorded regions preceding an object region to which the recording unit is to record data, said mark enabling reading of the object region; and~~

~~the recording state determination unit identifies the first region recorded with the dummy data said marked region as one of the unrecorded regions.~~